Space Weather Forecast

Issued on Saturday, 28 May 2022 at 01:24 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: Slight chance of radio blackouts. Risk minor to moderate geomagnetic storm intervals into start of UTC weekend.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Low over the past 24 hours, with GOES16 recording occasional low-level Common class X-ray flares. There are currently five numbered sunspot regions on the Earth-facing side. The final large spot is now transitioning onto the western limb and has faded from imagery, though this is most likely due to foreshortening effects. All other regions on the disc were small and simple, with no significant flares observed. No earth directed CMEs have been observed in coronagraph imagery.

Solar Wind / Geomagnetic Activity: The solar wind speed, as observed by DSCOVR at L1, showed an enhancement from background to nearly enhanced through the period, this initiating around 27/1200 UTC. The Interplanetary magnetic field was weak until 27/1000 UTC when it became moderate, rising to strong around 27/1200 UTC, before generally becoming moderate thereafter. The north south variation ranged between moderately positive and strongly negative. These solar parameter features are indicative of an entry into the HSS of CH84/- and/or CH85/-. The net effect of the above solar wind was mainly Quiet, with one Active period and a G1/Minor Storm interval (which has recent been reclassified from the initial Active) over the past 24 hours.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is now expected to be mainly Low. The daily risk of M-class flares is now assessed as a Slight Chance. There are no obvious bright flux regions over the eastern limb at present, and any increase in activity would therefore probably need to arise from development of the current quiet front side.

Solar Wind / Geomagnetic Activity: One coronal mass ejection features in the current forecast, that emitted on 25 May from a Moderate Class flare. This may arrive during the current slightly elevated winds from coronal holes CH84/- and/or CH85/-. If this occurs, it will likely bring elevated wind speeds, giving a peak of G1/Minor storm during Saturday 28 May, with a slight chance of G2/Moderate Storm. Conditions should become less disturbed later in the UTC weekend, becoming Quiet into the new working week.

Energetic Particles / Solar Radiation: Solar radiation storms should become less likely with time from now, with the recent daily slight chance now judged to be in decline as the most potent spots rotate past their peak positions for affecting Earth should they flare into the UTC weekend.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	60	10	1	1
Strong	G3	No	2	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	15	5	3	3
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	2	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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